

THE CLAIMS

What is claimed is:

- 5 1. An automated ice vending apparatus comprising:
 a holding vessel configured and dimensioned to contain sufficient ice pieces to
 provide a constant supply for an indeterminate time; and
 an ice transferring device positioned in the holding vessel and configured and
 adapted to transport a portion of the ice pieces in a substantially horizontal direction to remove
10 the portion through an aperture of the holding vessel to a weighing device, whereby the
 weighing device meters out a portion of ice pieces and deposits the portion into a readily
 transportable container.
2. The apparatus of claim 1, wherein the holding vessel is sized and
15 configured to contain about 2,000 to 20,000 pounds of ice pieces and the ice transferring
 device comprises a first transport mechanism operatively associated with a bottom surface of
 the holding vessel that moves the ice pieces in the substantially horizontal direction and a
 second transport mechanism at an end of the holding vessel that is inclined and that moves the
 ice pieces at the end in a vertical direction and in the same horizontal direction as the first
20 transport mechanism to facilitate transfer of the portion of ice pieces through the aperture and
 out of the vessel.
3. The apparatus of claim 1, wherein the holding vessel is chilled to
 maintain the ice pieces at a temperature of lower than about 34 degrees Celsius.
25 4. The apparatus of claim 1, further comprising an ice making device
 comprising a water source and being operatively associated with the holding vessel so that ice
 pieces are automatically produced thereby and disposed in the holding vessel.
- 30 5. The apparatus of claim 1, wherein the readily transportable containers
 are fully formed, hanging plastic bags including an open end that is closed after the metered
 portion is deposited therein.

6. The apparatus of claim 5, further comprising a fan that operates to blow open the open end of each bag to facilitate filling of the bag with the metered portion of ice pieces.

5 7. The apparatus of claim 5, further comprising a positioning device configured and adapted to position the bag so the open end can receive the metered portion of ice pieces.

10 8. The apparatus of claim 5, further comprising a closing device configured and adapted to releasably fasten each open end to seal each bag.

9. The apparatus of claim 1, further comprising a downwardly angled surface to facilitate delivery of each filled, readily transportable container to the consumer.

15 10. The apparatus of claim 1, wherein the ice transferring device further comprises an upwardly directional ice transport device operatively positioned and configured to receive the portion of ice pieces from a location adjacent the aperture and to transport the portion in an upwards direction to a weighing device.

20 11. The apparatus of claim 10, wherein the upwardly directional ice transferring device comprises an auger, an elevated conveyor, or a conveyor having a plurality of scoops thereon, or any combination thereof.

25 12. The apparatus of claim 1, wherein the ice transferring device comprises an ice sweep that begins at a starting position, moves in a substantially horizontal direction to facilitate transfer of the portion of the ice pieces to a position outside the holding vessel, and then returns to the starting position.

30 13. The apparatus of claim 2, wherein the second transport mechanism comprises a plurality of projections disposed along the inclined portion thereof to facilitate movement of the ice pieces from the holding vessel through the aperture.

14. The apparatus of claim 1, wherein the first transport mechanism comprising an ice sweep that moves in a substantially horizontal direction to transfer a portion of the ice pieces from the holding vessel to a position adjacent the second transport mechanism.

5 15. The apparatus of claim 1, further comprising a substantially horizontal transport device that moves ice pieces transversely from adjacent the aperture, a second vessel that acts as a receiving bin that holds the ice pieces received from the aperture, or both, to be moved upwards to the weighing device by an upwardly directional ice transport device.

10 16. A method for automatically delivering a plurality of pre-weighed ice pieces to a consumer which comprises:
automatically providing a plurality of loose ice pieces from a water source to a storage zone;
holding a sufficient amount of ice pieces in the storage zone to provide a
15 constant supply of loose ice pieces over an indeterminate period of time;
weighing a pre-selected portion of the ice pieces; and
depositing the pre-selected portion of the ice pieces into a readily transportable container.

20 17. The method of claim 16, further comprising opening an end of each readily transportable container to facilitate depositing the portion of ice pieces therein.

25 18. The method of claim 16, further comprising transporting a plurality of ice pieces out of the storage zone, wherein the transporting comprises moving the ice pieces in a substantially horizontal direction, raising an end of the storage zone above a second opposite end, pushing or pulling the plurality of ice pieces, or any combination thereof, so the ice pieces are removed from the storage zone to be weighed.

30 19. The method of claim 16, further comprising releasably securing an open end of the readily transportable container.

20. The method of claim 19, wherein the releasably securing comprises stapling or tying the open end of the container.

21. The method of claim 16, wherein the consumer must provide sufficient payment before the weighing and depositing of ice pieces into a readily transportable container, and it takes about 4 to 20 seconds to take ice from the storage zone and provide it into the readily transportable container.

5